Reply under 37 CFR §1.116 – Expedited Procedure – Technology Center 1793

PATENT
Docket No. 58688US004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Hauptmann et al.	Group Art Unit:	1793
Serial No.:	10/560,702	Examiner:	James E. McDonough
Confirmation No.:	1948		
Filed:	December 13, 2005		

For: UNIFORMLY COLOURED CERAMIC FRAMEWORK AND COLOURING SOLUTION

DECLARATION OF Holger Hauptmann

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Holger Hauptmann, declare and say as follows:

1. I am a co-inventor of the subject matter claimed in the above-identified U.S. Patent Application Serial No. 10/560,702, filed December 13, 2005.

2. I have read the Office Action mailed on January 8, 2009, and the documents cited therein, and make the following Declaration in support of the patentability of the claims.

3. It is important that the solution used has an adequate viscosity so that sufficient wetting of, and penetration into, the pores of the ceramic framework can be achieved. Thus, we conducted further experiments using varying molecular weights of PEG as shown in

the following table and the viscosities of these solutions were measured. A solution comprising PEG having a Mn in the range of 10,000 to 50,000 in an amount of 2 to 8 % by weight has a viscosity below 30 mPas. Such a solution is useful to achieve the objective of the present invention as stated at page 7, lines 19 to 26.

Molecular Weight	PEG Content in %	Viscosity mPas
35,000 PUR	6	14
	10	24
	15	61
1,000,000 300,000 Mixture	0,2 2	100
300,000 100,000 35,000	1 1 1	26

4. Test bars (LAVA Frame) were soaked with solutions containing different amounts and concentrations of PEG (Solution 1 = 6 % PEG 35,000; Solution 2 = 0.2 % PEG 1,000,000 plus 2 % PEG 300,000; Solution 3 = 1 % PEG 35,000, 1 % PEG 100,000, plus 1 % PEG 300,000). The penetration of these solutions into the test bars was examined (see Comparative Tests, in Exhibit A, enclosed). The test results show that not each and every solution, showing a range of PEG molecular weights, is useful to achieve the objective of the present invention.

5. The molecular weight affects the viscosity of the colouring solution and thus its ability to migrate into the pores of the ceramic framework. The use of PEG having a molecular weight outside the claimed range will lead to an inhomogeneous colouring of the ceramic framework.

6. I further declare that statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Holger Hauptmann

27. April 2009
Date

Comparative Tests

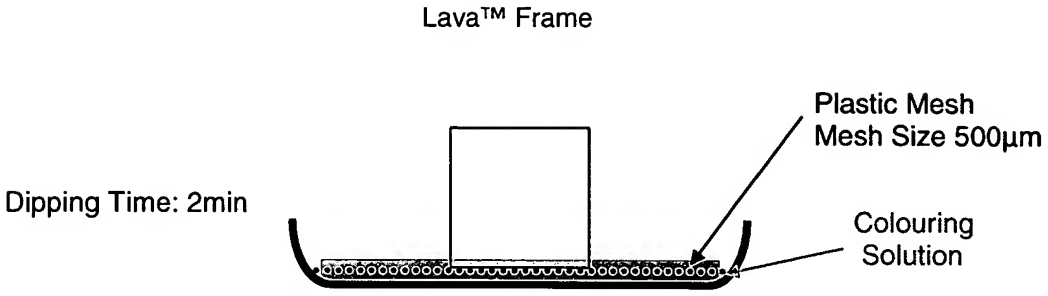
Evaluation of the influence of the concentration of different polyethylene glycols and mixtures thereof on the depth of penetration of a water containing solution in presintered ceramic framework.

Conditions:

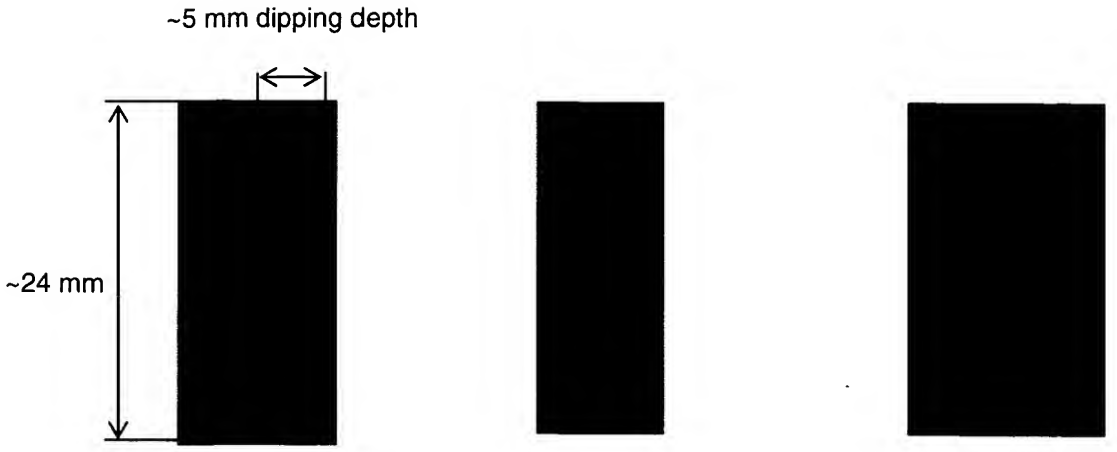
To all PEG containing solutions 100 ppm of Rhodamin B was added.

Solution 1:	PEG MW=35000	Content: 6%
Solution 2:	PEG MW=1000000	Content: 0,2%
	PEG MW=300000	Content: 2%
Solution 3:	PEG MW=35000	Content: 1%
	PEG MW=100000	Content: 1%
	PEG MW=300000	Content: 1%

Conditions:



- Dipping of the test specimen (Ø= ca. 24 mm, H=30 mm)
  - Dipping depth: 5 mm
  - dipping time: 2 min
- Cutting of the test specimen
- Finishing the cutting edges
- Viewing the surface area with a fluorescence microscope



solution 1
picture 1

solution 2
picture 2

solution 3
picture 3